SPECIFICATION AMENDMENTS:

Please amend the specification as filed as shown below.

Please replace paragraph [0002] on page 1 with the following amended paragraph:

[0002] The field of invention relates generally to lithography systems. More particularly, the present invention is directed to ~~control~~ controlling the relative dimensions of recorded patterns and original patterns during lithography processes.

Please replace paragraph [0004] on page 1 with the following amended paragraph:

[0004] United States patent application number 09/907,512 entitled HIGH RESOLUTION OVERLAY ALIGNMENT METHODS & SYSTEM FOR IMPRINT LITHOGRAPHY, filed July 16, 2001 (now U.S. Patent Number 6,921,615), discloses correction of magnification errors during imprint lithography processes. Specifically, disclosed is a template adjustment device that may be coupled to a support configured to hold the template during use. The template adjustment device may be configured to alter the size of the template during use. This may be achieved by applying forces to, or altering the temperature of, the template. Similarly, the dimensions of the substrate may be altered, in lieu thereof or in conjunction therewith. In this manner, compensation of magnification errors may be achieved to ensure that a template or photolithographic mask used to pattern a layer is properly adjusted with an existing patterned layer disposed on the substrate.

Please replace paragraph [0006] on page 2 with the following amended paragraph:

[0006] The present invention is directed to a method of controlling dimensional differences/similarities between an original pattern present in a mold and a recorded pattern present in a layer of a substrate. In this manner, the size of the recorded pattern may appear to be magnified and/or reduced, when compared to the original pattern. To that end, the method comprises defining a region on the layer in which to produce the recorded pattern. The substrate is bent to produce a contoured substrate surface in the region. Dimensional variations in the original pattern are produced by bending the mold, defining a varied pattern. The contoured surface and the mold are provided to have similar radii of curvatures. The varied pattern ~~in then~~is then recorded in the layer. These and other embodiments of the present invention are discussed more fully below.

Please replace paragraph [0013] on page 3 with the following amended paragraph:

[0013] Fig. 7 is a ~~top-down~~top-down view of a wafer, shown in Figs. 2, 5 and 6, upon which imprinting layers are disposed;

Please replace paragraph [0019] on page 4 with the following amended paragraph:

[0019] Fig. 1 depicts a lithographic system 10 in accordance with one embodiment of the present invention that includes a pair of spaced-apart bridge supports 12 having a bridge 14 and a stage support 16 extending therebetween. Bridge 14 and stage support 16 are spaced-apart and typically formed from thermally stable materials, e.g., materials having a thermal expansion coefficient of less than about 10 ppm/degree ~~centigrade~~ Centigrade at about

room temperature (~~e.g. 25 degrees Centigrade~~e.g., 25 degrees Centigrade). To that end, bridge supports 12, bridge 14, and/or stage support 16 may be fabricated from one or more of the following materials: silicon carbide, iron alloys available under the trade name INVAR®, or name SUPER INVAR™, and/or ceramics, including but not limited to ZERODUR® ceramic. Coupled to bridge 14 is an imprint head 18, which extends from bridge 14 toward stage support 16. Disposed upon stage support 16 to face imprint head 18 is a motion stage 20. Motion stage 20 is configured to move with respect to stage support 16 along X and Y axes, but may move along the Z axis, as well. A radiation source 22 is coupled to system 10 to impinge actinic radiation upon motion stage 20. As shown, radiation source 22 is coupled to bridge 14 and includes a power generator 23 connected to radiation source 22. The components of system 10 are supported by table 24 that may be constructed to isolate the components of system 10 from vibrations in the surrounding environment. An exemplary table 24 is available from Newport Corporation of Irvine, California.

Please replace paragraph [0028] on page 9 with the following amended paragraph:

[0009] The present invention attenuates, if not abrogates, magnification/run out errors by providing control of the relative dimensions between the original pattern and the region of wafer upon which the original pattern is to be recorded. Specifically, the present invention allows control of the dimensional relations between the original pattern present in mold 28 and the recorded pattern formed on wafer 30. In this manner, the size of the recorded ~~patterned~~ pattern may appear to be magnified and/or reduced, when compared to the original pattern. This may be

achieved so that the sizes of the original pattern and the recorded pattern are equal.

Please replace paragraph [0029] on page 9 with the following amended paragraph:

[0029] Referring to Fig. 9, control of the relative dimensions between the original pattern and the recorded pattern is provided by bending of mold 28 and wafer 30, out of the neutral, i.e., unbent, state. Consider that an area A, with a unit depth, of surface 32 may be defined as follows:

$$1.\quad A = \phi\, r$$

where r is a radius of a sphere about which surface 32 is curved and ϕ is the angle through which surface 32 is bent. It is seen that changes in area dA may be defined as follows:

$$2.\quad dA = \phi\, dr$$

so that the change in area A may ultimately be defined as follows:

$$3.\quad dA = As/2r$$

where s is a thickness of wafer 30 measured between surface 32 and side 33. Thus, were surface 32 provided with a concave ~~shape~~ shape, the area A [[~~is~~]]would be decreased, reduced. Conversely, were surface 32 provided with a convex ~~shape~~ shape, the area A [[~~is~~]]would be increased, magnified. In a similar fashion, bending of template 26 ~~results~~ would result in dimensional changes in mold 28 in accordance with equations 1-3, and, hence, the pattern on mold 28 ~~may be~~would be magnified or reduced.

Please replace paragraph [0030] on page 10 with the following amended paragraph:

[0030] Referring to Figs. 4 and 9, employing the concepts set forth above, compensation for magnification/run out errors is achieved by bending both template 26 and wafer 30. In this manner it is possible to obtain a desired amount of relative dimensional variations between a pattern on mold 28 and the region upon wafer 30 where the original pattern is to be recorded. For example, to magnify the original pattern on mold 28, template 26 would be bent so that surface 28c forms a convex shape. Surface 32 of wafer 30 would be bent to form a concave shape. Material 36a disposed between mold 28 and wafer 30 would then be solidified and polymerized, as discussed above, to form material 36c. Thereafter, mold 28 and wafer 30 would be returned to a neutral, ~~unbent, state~~unbent state. The net result is that the recorded pattern would be magnified when compared with the original pattern of mold 28. The bending of both mold 28 and substrate 30 ~~contribute~~ contributes to the magnification of the recorded pattern. Specifically, the magnification provided by wafer 30 resulted from wafer 30 returning to the neutral state. The magnification provided by mold 28 results from the expansion of the recorded pattern by bending of template 26 from the neutral state. In this fashion, it can be said that magnification is a function of the out-of-plane distortion applied to the original pattern. The dominant contributor to the magnification of the recorded pattern is defined by the relative ~~distances s or~~thicknesses s between wafer 30 and template 26. Specifically, the greater the s, the greater the contribution to the magnification in recorded pattern. Often, however, it is desired to minimize the out-of-plane distortion when achieving a

desired magnification. To that end, for a given magnification requirement, it would be desirable to increase the distance of either template 26, wafer 30 or both. It has been found preferable to increase the distance of template 26, as the distance of wafer 30 is typically standardized.

Please replace paragraph [0033] on page 12 with the following amended paragraph:

[0033] It should be understood that throughway 64 may extend between second side 48 and first recess 52, as well. Similarly, throughway 66 may extend between second side 48 and second recess 54. What is desired is that throughways 64 and 66 facilitate placing recesses 52 and 54, respectively, in fluid communication with a pressure control system, such as a pump system 70.

Please replace paragraph [0036] on page 14 with the following amended paragraph:

[0036] ~~Out of plane~~Out-of-plane distortion is achieved by selectively activating bladders 73a and 73b, thereby causing body of bending device to pivot about pillars. For example, were it desired to provide mold 28 with a convex surface, bladders 73b would be expanded. This would cause the body of shaping device 71 to bend such that central regions would move along the Z-axis toward chuck body 42. The bending motion of the body of shaping device 71 would then be transferred to chuck body 42 and, therefore, template 26. The longitudinal strain of bending of template 26 would then be transferred to mold 28 to achieve desired dimensional changes in the original pattern present thereon. In this example, magnification.

Please replace paragraph [0038] on page 15 with the following amended paragraph:

[0038] Employing a similar device, out-of plane distortion of wafer 30 could be achieved. To that end, a shaping ~~device 71~~device 171 would be included with wafer chucking system 140. Wafer chucking system 140 could be substantially identical to template chucking system 40, excepting that portion 62 may be obviated, were no actinic radiation to be transmitted therethrough. In this fashion, wafer 30 may be bent in a manner substantially similar to the bending of template 26.

Please replace paragraph [0039] on page 15 with the following amended paragraph:

[0039] Referring to Figs. 5 and 11, in operation, a region on wafer 30 is defined in which to produce a recorded pattern by depositing beads 36 at step 100. At step 102, wafer 30 is bent to produce a contoured surface in the region. At step 104, contact is made between template 26 and the region on wafer 30 by having mold 28 contact beads 36. At step 106, dimensional variations in the original pattern of mold 28 are undertaken by bending the template 26. In this manner, material 36a, shown in Fig. 4, in droplets ~~conform~~ conforms to surface 28c of mold 28. At step 108, material 36c is formed, solidifying a pattern that is the inverse of the pattern in mold, forming a recorded pattern. Thereafter, the mold 28 ~~is material~~and material 36c, shown in Fig. 4, are separated and wafer 30 is returned to the neutral state at step 110. In this manner, the recorded pattern is the inverse of the original pattern in mold 28 with differing relative dimensional variations, i.e., magnified or reduced.

Please replace paragraph [0041] on page 16 with the following amended paragraph:

[0041] The embodiments of the present invention described above are exemplary. Many changes and modifications may be made to the disclosure recited above, while remaining within the scope of the invention. Therefore, the scope of the invention should not be limited by the above description, but instead should be determined by the appended claims along with their full scope of equivalents.